

POST-LILAC FIRE: assessment implementation assistance

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when it all starts

- -Alerts
- -Mobilization
- -Evacuation





in numbers

- Flames broke out on Dec. 7,
 2017 just after 11 a.m. near I-15
 and SR-76 in Bonsall
- 1,300 residents were forced to evacuate to nearby shelters
- 4,100 acres were scorched by the fire's end on Dec. 13
- 114 homes destroyed
- 55 other homes damaged
- 45 horses were killed
- Cause of the fire remains under investigation

Damage Assessment:

114 homes

were destroyed and 55 others were damaged

2 business structures

were destroyed and another five damaged

90 other

outbuildings, sheds, or barns were destroyed and 20 damaged.

in numbers

- Fire and emergency response cost about \$5M
- Offset by state and federal reimbursement
- County's first use of the federal Wireless Emergency Alert system

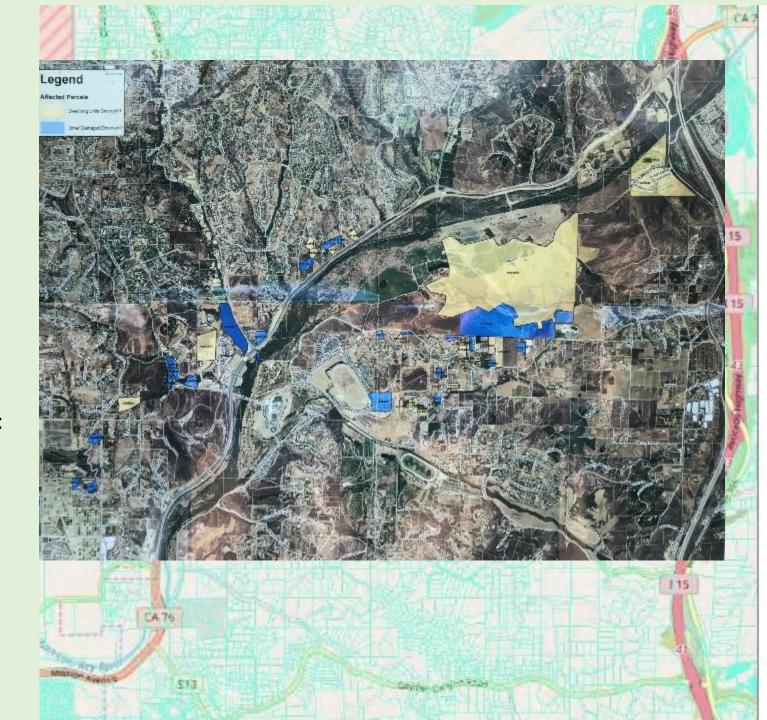


- -plan view
- -specific parcels

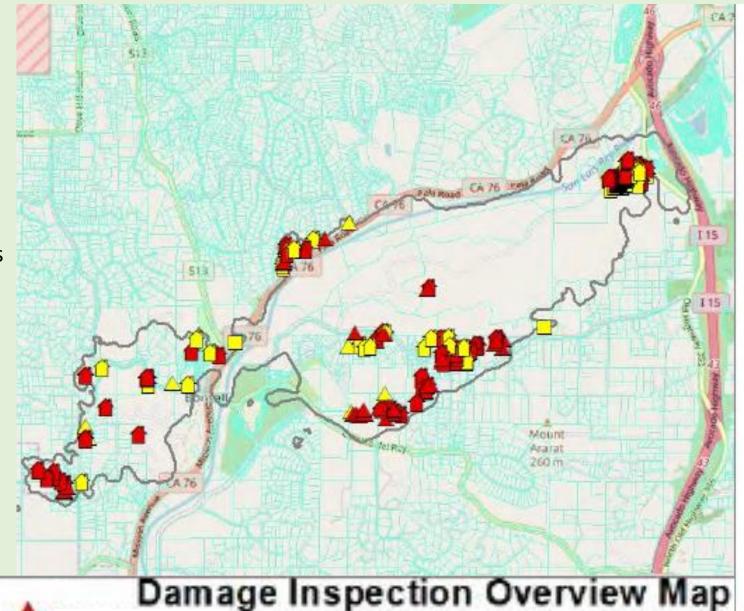
Affected Parcels:

Dwelling Units Destroyed

Other Damaged/Destroyed



- -plan view
- -specific structures



Residence, Destroyed

Damage Inspection

Residence, Damaged

Commercial, Destroyed

Outbuilding, Destroyed

Outbuilding, Damaged

Other, Destroyed

Lilac 5 Incident CA MVU 024612

Date: 12/12/2017



Eastern Portion of the Lilac Fire

Rancho Monserate Mobile Home Park





Damage Inspection Overview Map

Residence, Destroyed

Residence, Damaged

Commercial, Destroyed

Outbuilding, Destroyed

Outbuilding, Damaged

Other, Destroyed

Lilac 5 Incident CA MVU 024612

Date: 12/12/2017



Central Portion of the Lilac Fire



Damage Inspection Overview Map Damage Inspection

Residence, Destroyed

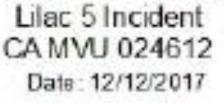
Residence, Damaged

Commercial, Destroyed

Outbuilding, Damaged

Outbuilding, Destroyed

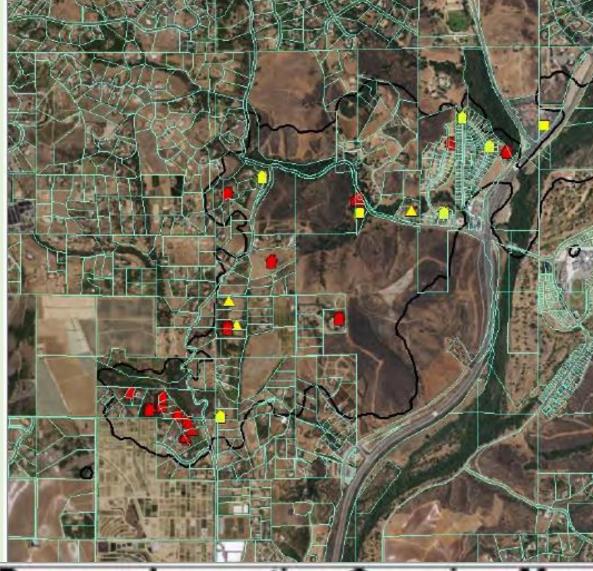
Other, Destroyed





Western portion of the Lilac Fire





Damage Inspection Overview Map

Residence, Destroyed

Residence, Damaged

Commercial, Destroyed

 \triangle

Outbuilding, Destroyed

Outbuilding, Damaged

Other, Destroyed

Lilac 5 Incident CA MVU 024612

Date: 12/12/2017



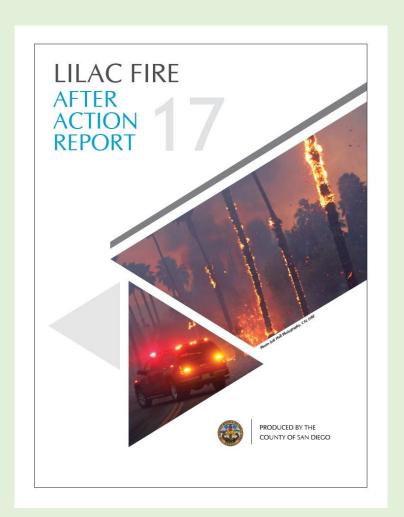
Lilac Fire: After Action Report

County Releases Lilac Fire Response Report



Image Credit: San Diego County Sherill's Department

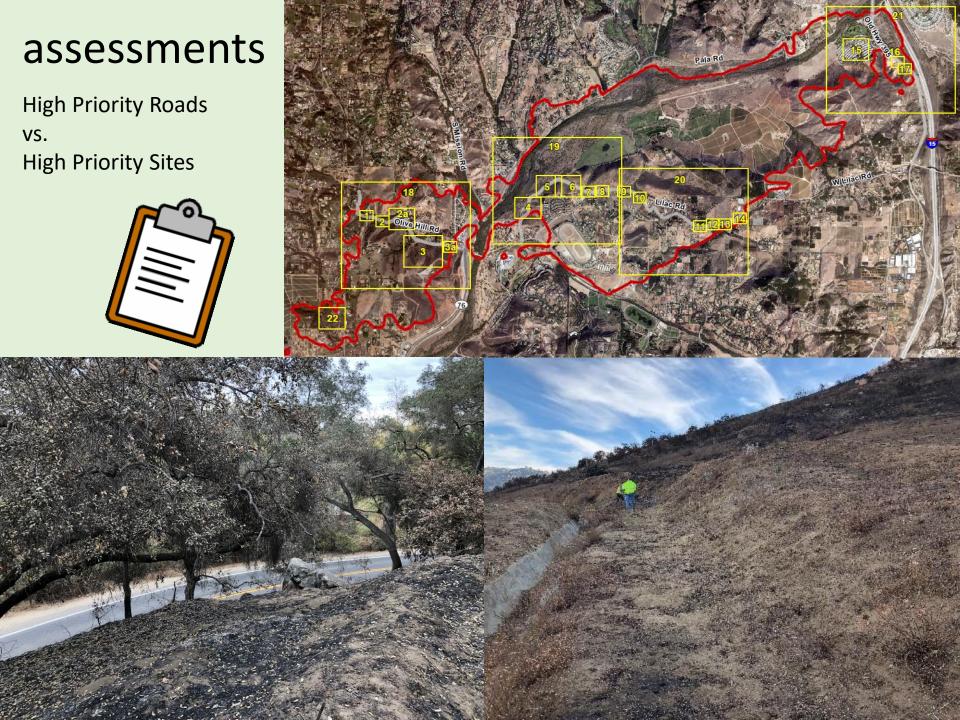
By Yvette Urrea Moe, County of San Diego Communications Office Mar. 2, 2018 | 10:11 AM



Released March 2, 2018

Available at:

http://www.readysandiego.org/aar/lilac-fire-december-2017/



right of entry agreements

- Private Property as part of High Priority Roads (HPR)
- High Priority Sites (HPS)





contracts

- -Assessments
- -Qualified SWPPP Developer(QSD) Inspectors
- -RFQ & RFB for Erosion Control
- -RFQ & RFB for Hydro Mulch
- -Traffic Control



BMPs considered

- -Culvert Cleanout
- -Inlet Protection
- -Check Dams
- -Berms
- -Chevrons
- -K-Rails
- -Fiber Rolls
- -Energy Dissipater
- -Hydro Mulch





Culvert Cleanout

Function:

- -Allows for free passage of water in culverts and channels
- -Creates additional capacity for runoff volume in sediment retention structures **Equipment:**
- -Earth moving equipment (i.e. excavators, back hoes, etc.)
- -Hand tools (i.e. shovels, picks, clippers, saws)



Inlet Protection

Function:

- -Slows and temporarily ponds run-off before it enters the storm drain to allow sediment to settle
- -Traps mobilized sediment, ash and debris making it easier for maintenance to remove after rainfall

Materials:

- -Gravel-filled burlap bags (GBB)
- -Gravel-filled plastic bags (GBP)
- -Geotextile sock or rolls (GSR)





Check Dams

Function:

- -For drainage and sediment control in large rills, gullies and in drainage swales to reduce water velocity and retain debris and sediment
- -Bandaid bags: where large rills/small gullies exist which are too small for conventional check cams, gravel burlap bags can be dropped into the gully to retain sediment and repair the channel

Materials:

- -Gravel-filled burlap bags (GBB)
- -Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)



Berms

Function:

- -Slows and temporarily ponds run-off before it enters the storm drain to allow sediment to settle
- -Traps mobilized sediment, ash and debris making it easier for maintenance to remove after rainfall

Materials:

- -Gravel-filled burlap bags (GBB)
- -Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)





Chevrons

Function:

- -Drainage and sediment control on longitudinal slopes and roadways to reduce water velocity and retain debris and sediment
- -Gravel-filled burlap bags (GBB) or
- -Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs

Materials:

- -Gravel-filled burlap bags (GBB)
- -Sand-filled plastic bags (only as noted on HPS plans to restore prior post-fire BMPs)





K-Rails

Function:

-To divert, deflect or retain concentrated flows of debris and sediment to prevent damage to roads, infrastructure or private property

Materials:

-Concrete K-Rails require specialized equipment such as an excavator with hoist attachment or forklift





Fiber Rolls wrapped with Burlap

Function:

- -Provide perimeter control around burned areas
- -Reduce velocity and flow length in small drainage channels

Materials:

-Contents shall be Certified Weed Free Rice Straw wrapped in burlap or biodegradable fabric (not plastic netting) and shall not be moldly, decayed or injected or contain additives





Energy Dissipater (Rip Rap)

Function:

- -Reduce flow velocity
- -Protect underlying materials
- -Reduce scour and erosion at discharge points

Materials:

- -Geotextile/Filter fabric to separate energy dissipater from underlying soil
- -Rip-Rap (angular stone, size dependent on velocity placed on top of the filter fabric)
- -Reno Mattress and stone-filled gabions placed on top of the filter fabric
- -Concrete energy dissipater





Hydro Mulch

Function:

- -Immediate control of fugitive ash and dust
- -Temporary soil erosion control from rain
- -Promotion of vegetation establishment for long-term, sustainable erosion control



Applied to burned slopes using a two step application:

Step 1:

Slurry of water, mulch and tackifier mixed and applied at the following rates per acre:

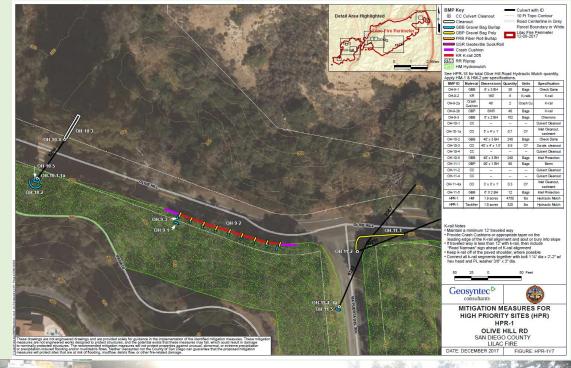
- -1,500 gallons of water
- -500 pounds cellulose fiber trace mulch
- -200 pounds of guar based tackifier and dust palliative

Step 2:

Standard hydraulic mulch applications with the following rates per acre:

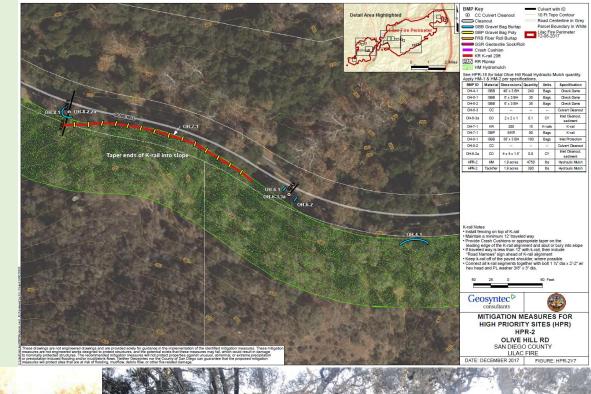
- -Gallons of water will be variable per machine
- -2,000 pounds per acres of mulch with tackifier

Olive Hill Road Assessments





Olive Hill Road Assessments





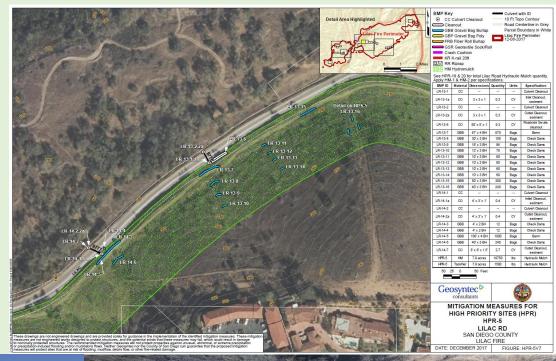


High Priority Roads (HPR)



GBB Gravel Bag Burla;
GBP Gravel Bag Poly
FRB Fiber Roll Burlap

W Lilac Road Assessments





W Lilac Road Assessments



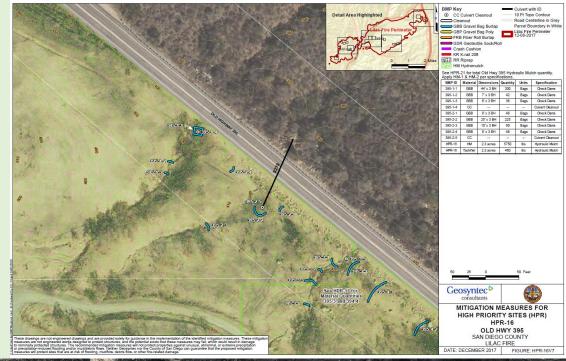
W Lilac Road Assessments







Old Highway 395 Assessments



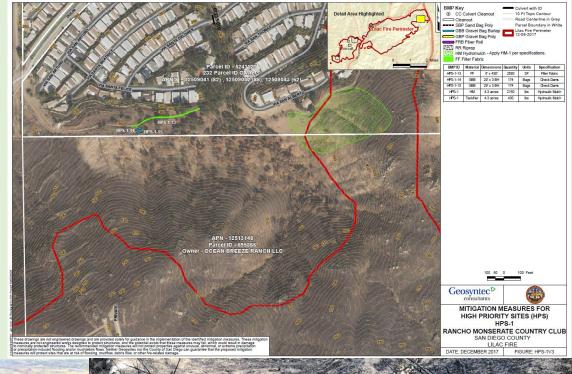


Old Highway 395 Assessments



Rancho Monserate Mobile Home Park

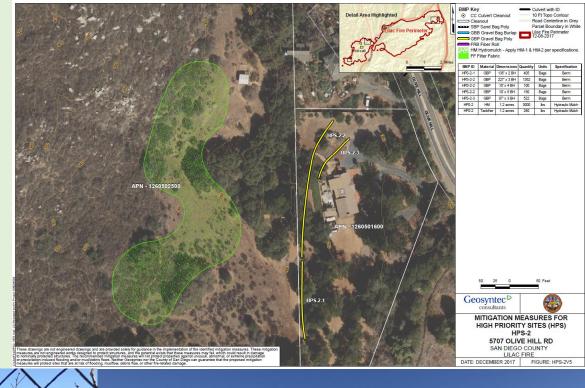
High Priority Sites (HPS-1)





Orchid Farm

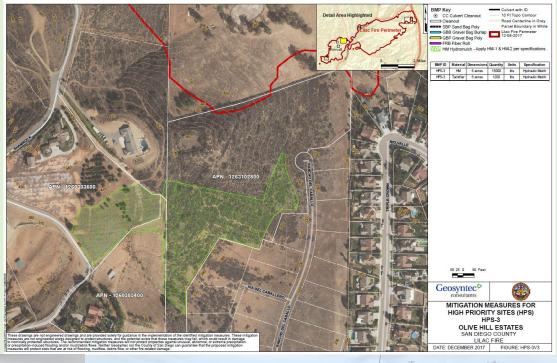
High Priority Sites (HPS-2)





Olive Hill Estates

High Priority Sites (HPS-3)



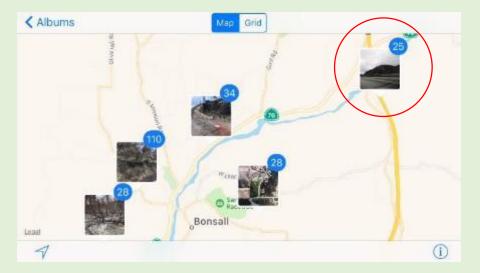


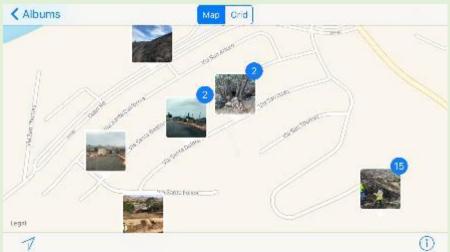
more right of entry agreements

Private Property within High Priority Roads (HPR) High Priority Sites (HPS)



photo locations?





Implementation of Post-Fire Best Management Practices (BMPs)

- Culvert and Drainage (swale, inlet, etc.) Cleanout
- Inlet Protection
- Check Dams
- Berms
- Chevrons
- K-Rails
- Fiber Rolls
- Energy Dissipater
- Hydraulic Mulch

Olive Hill Road Implementation: HPR 1





Olive Hill Road Implementation: HPR-1



Olive Hill Road Implementation: HPR-2







Olive Hill Road Implementation: HPR-2a



Hydraulic mulch shall be applied to burned slopes using a two-step application as described below:

Step 1. HM-1 consists of a slurry of water, mulch and tackifier shall be mixed and applied at the following rates per acre:

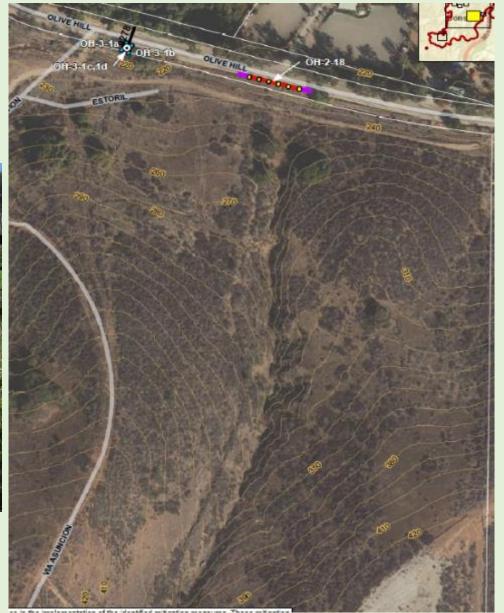
- · 1,500 gallons of water
- 500 pounds cellulose fiber trace mulch
- 200 pounds of guar based tackifier and dust palliative

Step 2.HM-2 consists of a standard hydraulic mulch applications with the following rates per acre:

- · Gallons of water will be variable per machine
- 2,000 pounds of mulch with 4% tackifier per acre

Olive Hill Road Implementation: HPR-3





Olive Hill Road Implementation: HPR-3a



























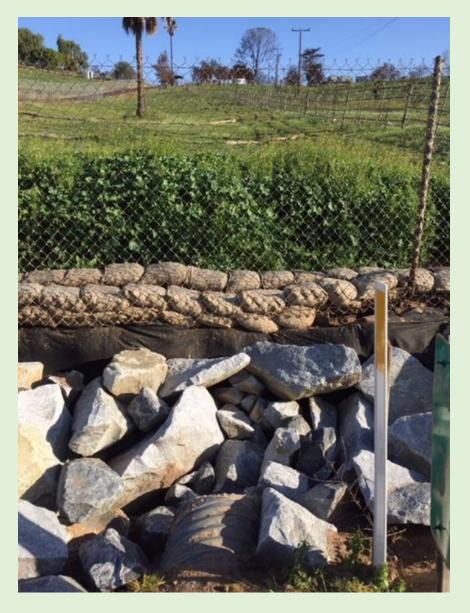


















Rancho Montserate Mobile Home Park: HPR-15







Old Highway 395 Implementation: HPR-16



Old Highway 395 Implementation: HPR-17

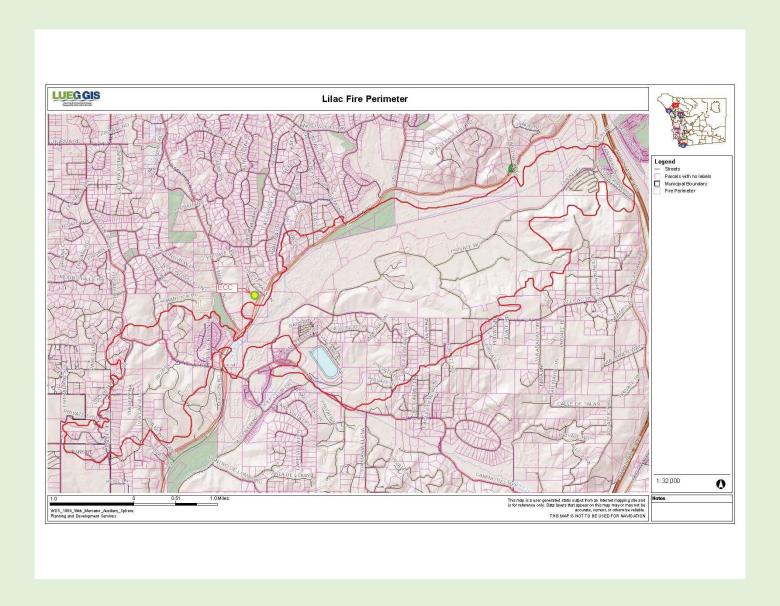




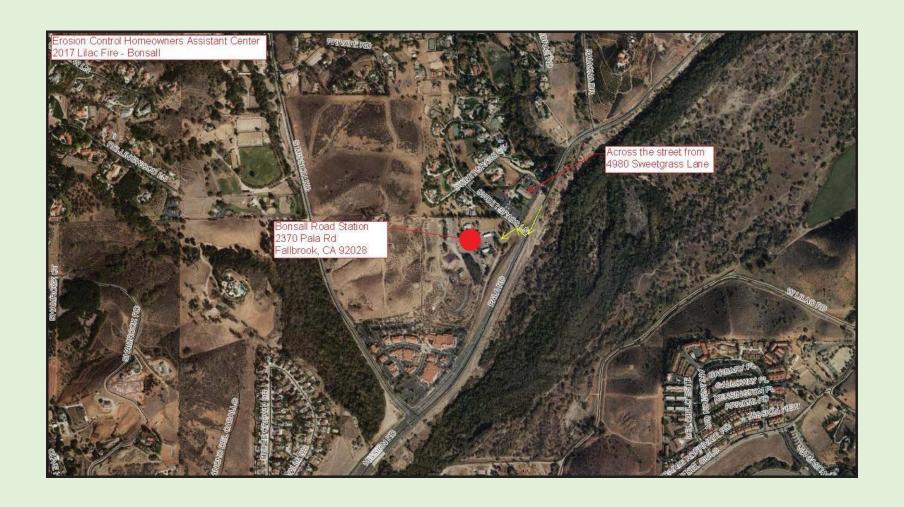


Rancho Monserate Mobile Home Park: HPS-1









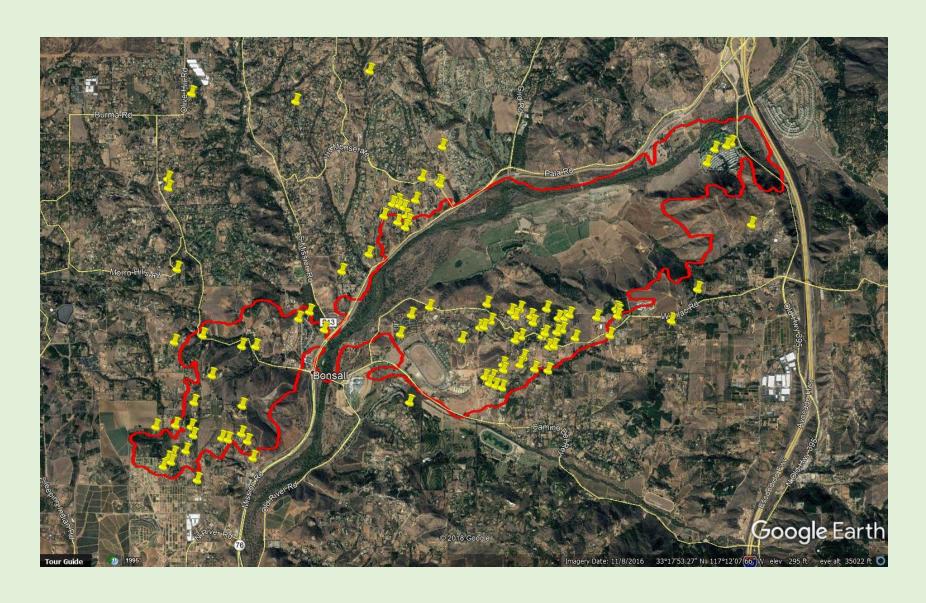




66 days25 rotating staffFC, WPP, PDCI, Roads, Wastewater, CIP7 days a week150 property owners



Property owners



BMPs









BMPs



Educational sheets

Erosion Control Homeowners Assistance Center



Location: County of San Diego Bonsall Road Station at 2370 Pala Road

Hours: Mondays through Saturdays: 8am to 5pm

Sundays: 9am to 2pm (Hours subject to change)

For people living in and around the areas burned by the Lilac fire, sandbags, gravel bags, fiber rolls, and native seed mix are available for free to help stabilize burned properties before winter rains arrive.

Brochures are available showing potential damages to property frhttp://www.sandiegocounty.gov.homeowners-assistance-center-/

County Department of Public Wo about how to protect their home properties to visually inspect and structures. To schedule a proper

For additional information, call (8

http://www.sandiegocounty.gov, homeowners-assistance-center-/

Centro de Asistencia Erosión De Suelo Pa



COUNTY OF SAI have

Ubicación: Condado de San Diego Estación Horario: Lunes a Sábado: 8am to 5pm

> Domingo: 9am to 2pm (Horario suieto a cambio)

Para personas que viven en y alrededor de áre sacos de arena, bolsas de grava, rodillos de fit disponibles gratuitamente para ayudar a estal de que lleguen las lluvias de invierno.

Información acerca de cómo instalar correctamente los elementos y reducir posibles daños de erosión de suelo de la propiedad causada por las lluvias se encuentra en el siguiente enlace:

http://www.sandiegocounty.gov/content/sdc/dpw/flood/erosion-control-homeowners-assistance-center-/.

Personal del Departamento de Obras Públicas del Condado estará en el centro para asesorar a las personas acerca de cómo proteger sus casas. El personal también podrá ir a propiedades para inspeccionar y asesorar sobre la mejor manera de proteger las estructuras. Para programar una evaluación de la propiedad, lame a (1888) 846-8080.

Para más información, favor de llamar al (888) 846-0800 or visitar:

http://www.sandiegocounty.gov/content/sdc/dpw/flood/erosion-control-homeowners-assistance-center-/



Flood After Fire: The Increased Risk

Floods are the most common and costly natural hazard in the nation. After a wildfire, the flood risk increases significantly. The time to buy flood insurance is now. Residents and business owners need to protect their homes and assets from the devastating financial losses from a flood, especially after a wildfire, before the next weather event occurs.

WILDFIRES

VILLPHESS wildfires dramatically after the terrain and ground conditions. Normally, vegetation absorbs rainfall, reducing runoff. However, wildfires leave the ground charred, barren, and unable to absorb water, creating conditions ripe for flash flooding and mudflow. Flood risk remains significantly higher until vegetation is restored—up to 5 years after a wildfire. Flooding after a fire is often more severe, as debris and sah left from the fire can form mudflows. As arimwater moves across charred and denuded ground, it can also pick up soil and sediment and carry it in a stream of floodwaters. This can cause more similificant dramage.

Residents and business owners are urged to purchase flood insurance **now** to assure financial protection from flooding. By law, there is a 30-day waiting period from the date of purchase until the flood insurance coverage takes effect with very few exceptions:

- . the purchase of insurance is in connection with the extension, or renewal of a loan;
- the initial purchase is in connection with a revision or update to a Flood Insurance Rate Map and within 13 months of the revision or update; and
- FEMA determines that the property covered by the policy is affected by flooding on Federal land that is a result of, or exacerbated by, post-wildfire conditions.

*Ask your insurance agent about these exceptions.

REDUCE YOUR RISK

A flood does not have to be a catastrophic event to bring high out-of-pocket costs, and you do not have to live in a high-risk flood area to suffer flood damage. Arout of wenty percent of flood insurance claims occur in moderate-to-low risk areas. Property owners should remember to:

Buy Flood Insurance. Most standard homeowner's policies do not cover flood damage. Flood
insurance is affordable, and important to protecting your investment. An average flood policy costs
around \$990 a year, and rates start at less than \$516 a year for homes in moderate- to low-risk

ESEA a mixing lists support our citizens and fest surpoiders to ensure that is a nation was onlying else to build, restrain, and some many lists are proposed by the contract of the contract

Homeowner's Guide for Flood, Debris, and Erosion Control

The County of San Diego

IOMEOWNER'S GUIDE: SEEDING FOR EROSION CONTROL IN BURNED ANDSCAPING ADJACENT TO HOMES



wildfire is seeding severely burned landscaped areas. Remember er after a fire depending on the sevently of the burn. It is important clatine if the plants do not threaten personal safety or property ager of falling should be identified first). Avoid disturbing soil on no turburned, the roots of vegetation held the soil together and from washing away.

where there are few plant roots to hold soil or where the soil has ee crossion may be reduced by seeding certain annuals. The seed lapted to Southern California. Seed max includes: California Poppy u.ca), Blue Annual Lupine (Lupinus suecculentus), Annual Fescue Hykon Rose clover (Trifolium intram) (incculated seed).

for Seeding Burned Landscaped Areas around Homes tion to begin before the fall mins, usually in late October into November.

of seed, fertilizers, and straw, formly by hand or with a hand-operated seed spreader at the rate of ¼ to

I per 1000 square feet*.

To improve the growth of the seed mixture, use of an organic or slow-release chemical

- fertilizer containing sulfur and phosphorous works best. Do not apply more than the product label recommends. Spread weed-free straw (do not use hay) on top of the seed and fertilizer. We recommend
- Spread weed-free straw (do not use hay) on top of the seed and fertilizer. We recommend about one (1) bale of straw per 1000 square feet* of area. Wet the straw to keep it from blowing away.
- olowing away.

 6. If you can irrigate, sprinkle lightly avoiding runoff until the soil is wet to a depth of 6 inches, then sprinkle daily to keep the soil moist surful seeds begin to sproot. If you can not irrigate, wait for the rains to bring up your seed mix. If it is a day wister, apply water on the site in February and March. This will help to obtain full growth of the plants, and was the following find an arrows and subscent transparation.
- enhance the flower display, and promote subsequent regeneration.

 During the dry months following seeding, the grasses and plants, as well as residual straw may dry out and become a fire hazard. Remove this dry material in the zone around

For additional information on erosion control:

Download the Homeowners' Guide to Flood, Debris, and Erosion Control after Fires at:

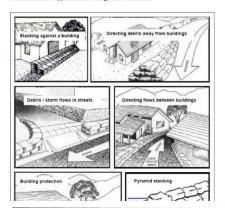
http://www.sdcountercovers.com/dournest-Homeowners/Boolinghathook10-07final.pdf

or call the County Stormwater holline at 1-888-846-0800.

- To calculate the square feet of a rectangular planting area, multiply the length in feet by the width in feet. Example: 30 feet long times 20 feet wide equals 1000 square feet.

Flyers

should be placed across the slope not more than two high as shown in Figure 2. Remember to clean out the silt trapped behind the bags after each storm.



During normal

conditions, vegetation

helps absorb rainwater.

But after an intense wildfire, burned

vegetation and charred soil form a water

To prevent water from seeping around a door, a rubber seal (similar to weather stripping) can be affixed to the doorframe. When the door is closed, a wateright seal should result. To prevent water from seeping around a sliding glass door a plastic sheet (2 to 3 millimeters thick) should be placed between the door and the sandbags or between the door and the plywood barrier (see Figure 5). This is not recommended if water levels are anticipated to rise above two feet.



Figure 5 - Sealing Conventional and Sliding Glass Doors

For Structures - Low-grade lumber can be used to create a timber deflector (see Figure 6). This device should be limited to a height of three feet. When installing timber deflectors, drive stakes into the ground at least one-half their length to ensure proper anchorage. Place deflectors on solid, level soil if possible to reduce the hazard of undercutting.

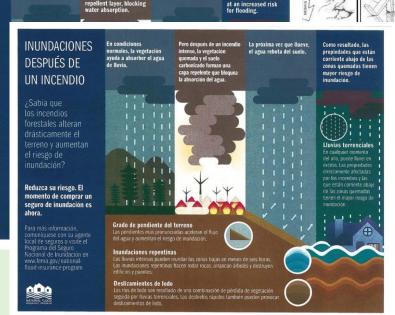
FLOOD AFTER FIRE

Did you know that wildfires dramatically alter the terrain and increase the risk of

Reduce your risk. The time to buy flood insurance is now.

Contact your local insurance agent for more information or visit the National Flood Insurance Program at www.fema.gov/nationalflood-insurance-program





During the next rainfall, water bounces off of the

And as a result,

properties located below or downstream

of the burn areas are



FIBER ROLLS for Post-Fire Runoff, Erosion, and Sediment Control Fiber rolls should be used for erosion control after a fire to prevent property damage from rain events.

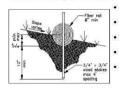


Straw Fiber Rolls consist of straw that is compacted into plastic netting to form a tube, usually with standard dimensions of 9 inches in diameter by 25 feet long. Fiber rolls have a number of applications:

- Across slope faces to shorten slope length, reduce
- runoff velocity, and retain sediment;

 Along the toe and top of slopes to spread runoff as
- sheet flow;
 As check dams in channels and drainage ways;
- Along the perimeter of fire-affected lots to retain ash and sediment.

There are a few keys to fiber roll installation:



- They should be trenched according to the manufacturer's instructions;
- They should be held in place using wooden stakes;
- They should be inspected when rain is forecast;
- is forecast;
 They should be repaired or replaced when split or torn; and
- Ash and sediment should be removed when it reaches % of the roll height.

For more information or assistance about erosion and sediment control measures, call the County Stormwater Hotline:

1-888-846-0800

Or visit our website at www.sdcountyrecovery.com





Figure 1: Examples of Unprotected vs. Protected Homes

An Unpro

Revised August 2015

ECHAC open for storms

SanDiegoCounty.gov Home Department of Public Works MENU V I WANT TO ... ROADS **ENGINEERING ENVIRONMENT** DEVELOPMENT **AIRPORTS SEWER Erosion Control Homeowners Assistance Center in**

Bonsall, CA

NOW OPEN: 8 A.M. to 5 P.M.

Wednesday (3/21/18)

Thursday (3/22/18)

Friday (3/23/18)

Saturday (2/24/18)



For people living in and around the areas burned by the Lilac fire, sandbags and fiber rolls are available for free to help stabilize burned properties before winter rains arrive. Brochures are also available showing how to properly install the items to reduce potential damages to property from soil erosion caused by winter rains.

Erosion Control Homeowners Assistance Center Location:

Bonsall County Road Station

2370 Pala Rd. Fallbrook, CA, 92028

(Map search hint: Across the street from 4980 Sweetgrass Lane)

The Erosion Control Center will open before and during major rain storms. When open the dates and hours of operations will be posted at the top of

For information or to schedule a property assessment, please call (888) 846-0800.

Resource Links

Flood After Fire Infographic

Seeding for Erosion Guide

Erosion Control Brochure - Sandbags

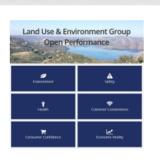
Fresion Control Brochure - Fiher Rolls











The LUEG Open Performance website provides a look into how the Land Use and Environment Group makes your life BETTER through the use of performance measures and data.







questions

René Vidales, Program Coordinator, Watershed Protection Program

Jeremy Fantaroni, Environmental Planner III, Watershed Protection Program

Mehdi Khalili, Civil Engineer, Flood Control District